AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning on page 7, line 15 with the following rewritten paragraph:

In a preferred embodiment, the plurality of variables include material, wavelength and photocatalytic reaction variables, may include at least a first laser wavelength, a base fluence value, a fluence increment value, a first gas partial pressure, a partial pressure increment, a total pressure, first and second reactant types, a material absorption coefficient, a material threshold value, a material refractive index, an angle of incidence, and first and second photochemical reaction parameters. The first laser wavelength is preferably in the range of 100 to 400 nm.

Please add the following paragraph after the paragraph ending on line 8 of page 12:

-- Fig. 3 shows a representative print out of the calculations carried out in the calalations section, including the formulas used in performing the calculations and the results of the calculations, and Fig. 4 is a representative print out showing the final resultant values. --

Please replace the paragraph beginning on page 12, line 9 with the following rewritten paragraph:

Input Pulse Fluence (FI) 24 is defined in mJ/cm^2 and as a Base Fluence Value 50, Fig. 2, which is then incremented by the row number (minus 1) times the Fluence Increment 52, Fig. 3. This is simply a means for stepping the calculations through a linear range of fluence values. Usually one should start below the ablation threshold and work upwards. Special attention should be paid later on as to whether enough of the fluence reaches the surface or is instead absorbed by the gases.

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<u>Please replace the paragraph beginning on page 12, line 15 with the following rewritten</u>
<u>paragraph</u>:

Gas 1 Partial Pressure (G1P) 26 is defined in Torr and is a Starting Partial Pressure 54 which is then incremented by the row number (minus 1) times the Partial Pressure Increment 56, <u>Fig. 3</u>. Like the pulse fluence calculation, this is merely a means of stepping through a range of gas component pressures. Usually one should hold either this partial pressure constant or the fluence constant so that two parameters are not varied at once. In this model it is assumed that the most photoreactive gas component is Gas 1.